

CLAIMS

What is being claimed is:

1. A light emitting device comprising:
a light emitting diode comprising a substrate, a plurality of semiconductor layers overlying the substrate, and a contact disposed on a first surface of the plurality of semiconductor layers, wherein light is extracted through the first surface; and
a reflective material overlying a portion of the first surface, the reflective material having an aperture through which light exits the device.
2. The light emitting device of Claim 1 wherein the contact is at least partially transparent.
3. A light emitting device comprising:
a transparent member having a first surface, a second surface, and an exit surface;
at least a first light emitting diode disposed on the first surface; and
one of a second light emitting diode and a reflective coating disposed on the second surface;
wherein the transparent member is shaped such that light emitted from the at least one light emitting diode is directed toward the exit surface.
4. The light emitting device of Claim 3 further comprising a reflective coating disposed on a portion of the first surface not covered by the first light emitting diode.
5. The light emitting device of Claim 3 wherein the second surface is coated with a reflective coating, the device further comprising:
a third surface;
a fourth surface coated with a material reflective of light emitted from the first light emitting diode; and
a second light emitting diode disposed on the third surface;
wherein the first and third surfaces form a wedge with an apex opposite the exit surface, and the second and fourth surfaces are substantially parallel.

6. The light emitting device of Claim 5 wherein the first light emitting diode and the second light emitting diode each emit light at a different wavelength.

7. The light emitting device of Claim 5 wherein the second light emitting diode emits red light, the device further comprising a dichroic material disposed between the second light emitting diode and the third surface.

8. The light emitting device of Claim 7 further comprising a third light emitting diode disposed on one of the first surface and the third surface, wherein one of the first and the third light emitting diodes emits green light and the other of the first and the third light emitting diodes emits blue light.

9. The light emitting device of Claim 5 wherein the first light emitting diode and the second light emitting diode each emit light of substantially the same color.

10. The light emitting device of Claim 3 wherein the first light emitting diode comprises:

- a transparent substrate;
- a plurality of semiconductor layers that are transparent to light emitted by the first light emitting diode; and
- a contact reflective of light emitted by the light emitting diode, wherein the plurality of semiconductor layers are disposed between the transparent substrate and the contact.

11. The light emitting device of Claim 10 further comprising a submount attached to the contact, wherein the first light emitting diode is mounted on the first surface such that the transparent substrate is closest to the first surface.

12. The light emitting device of Claim 3 wherein the first surface and the exit surface are not parallel.

13. The light emitting device of Claim 3 wherein the transparent member is selected from the group consisting of sapphire, glass, acrylic, and silicone.